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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/611,069	07/06/2000	Jae-Yoel Kim	678-511(P9427)	5048

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Paul J Farrell Esq
Dilworth & Barrese
333 Earle Ovington Boulevard
Uniondale, NY 11553

EXAMINER

PIZARRO, RICARDO M

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 03/25/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/611,069

Applicant(s)

KIM ET AL.

Examiner

Ricardo M. Pizarro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10, 19, 22-23, 24-29, 48-52, 53-54, 56, 67 are is/are allowed.
- 6) ☒ Claim(s) 11, 16, 30, 35, 36, 43 and 45 is/are rejected.
- 7) ☒ Claim(s) 12-15, 17, 18, 20, 21, 31-34, 37-42, 44, 46, 47 55, and 57-66 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 15,16, 18, 20-21, 9, 30-34, 36, 38-42,45, 55, 57-60,61-63, 64-66 are objected to because of the following informalities and it is suggested to applicant:

In claim 15 line 8 replace “the” with –a-. In claim 21 line 2 replace “orthogonal” with –biorthogonal-.

In claim 16 line 4 and line 7 delete “the”, in line 9 replace “biorthogonal sequence” with –biorthogonal sequences-.

In claim 24 line 3 insert “ a sequence having” before –the same symbols-.

In claim 30 line 6 insert “plurality of” before –basis-.

In claim 36 line 7 delete “the”

In claim 38 line 3 insert “a sequence having” before –the same symbols-.

In claim 43 line 4 insert “ at least one” before –mask-,line 7 insert “at least one” before –operation circuit-.

In claim 45 line 1 insert “at least one” before –operation circuit-.

In claim 55 line 1 insert ‘plurality of’ before –operation circuits-.

In claim 57 line 6 delete the first occurrence of “the”.

In claim 61 line 6 delete the first occurrence of “the”.

In claim 64 lines 9 and 12 delete the first occurrence of “the”.

Appropriate correction is required.

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Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 11,16,30, 35-36, 43,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bottomley.

Us patent No. 5,550,809 (Bottomley) discloses a CDMA system comprising an orthogonal sequence generator for generating a plurality of basis orthogonal sequence (generator 21 in Fig. 1, col 8 line 60) , a mask sequence generator for generating a plurality of basis mask sequences (Mask generator 24 in Fig. 1, col 9 line 4) and an operation unit for adding a basis biorthogonal sequence and the basis mask sequence selected among the basis biorthogonal sequences and the basis mask sequences (Adder unit 26 in Fig. 1, col 9 line 6) , as in claim 11.

An orthogonal sequence generator(generator 21 in Fig. 1, col 8 line 60) for generating a plurality of biorthogonal sequences and outputting a biorthogonal sequence selected based on the first information bits among the plurality for biorthogonal sequences (said generator can produce either orthogonal or biorthogonal sequences, col 8 line 61), a mask sequence generator for generating a plurality of mask sequences and outputting a mask sequence selected based on the second information bits (Mask generator 24 in Fig. 1, col 9 line 4) among the plurality of mask sequences and an adder for adding the biorthogonal sequences (Adder unit 26 in Fig. 1, col 9 line 6), as in claim 16.

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An encoding method in A CDMA mobile system comprising generating a plurality of basis biorthogonal sequences (generator 21 in Fig. 1, col 8 line 60, said generator can produce either orthogonal or biorthogonal sequences, col 8 line 61) , generating a plurality of basis mask sequences (Mask generator generates said sequences 24 in Fig. 1, col 9 line 4) and adding a basis biorthogonal sequence and basis mask sequence among the plurality of basis biorthogonal sequences (Adder unit 26 in Fig. 1, col 9 line 6), as in claim 30.

A method of encoding including first information bits and second information bits in a CDMA mobile communication system, comprising generating a plurality of biorthogonal sequences (generator 21 in Fig. 1, col 8 line 60, said generator can produce either orthogonal or biorthogonal sequences, col 8 line 61) and outputting a biorthogonal sequence selected based on the first information bits among the plurality of biorthogonal sequences, generating a plurality of mask sequences (Mask generator 24 in Fig. 1 generates said sequences, col 9 line 4) and outputting a mask sequence selected based on the second information bits among the plurality of mask sequences and adding the selected biorthogonal sequence (Adder unit 26 in Fig. 1, col 9 line 6), as in claim 35; wherein the plurality of biorthogonal sequences are Walsh codes (abstract) , as in claim 36.

AI decoding apparatus in a CDMA mobile system comprising a mask sequence generator for generating at least one mask sequence (Mask generator 24 in Fig. 1, col 9 line 4), at least one operation circuit for receiving an input signal and the generated sequence and removing the mask sequence from the input signal and at least one correlator for receiving the signal from the at least one operation circuit, calculating correlation values of the received signal with a plurality

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of orthogonal sequences numbered with corresponding indexes (col 13 lines15-23) , as in claim 43; wherein the operation circuit is a multiplier (multiplier 106 in Fig. 4), as in claims 43 and 45.

Bottomley did not specifically disclose bits being TFCI bits, as in claims 11,16, 30, 35, 43,45

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention that the Bottomley reference encodes information bits that could be intended as TFCI bits in the transmission signal with the motivation of a CDMA system with more capacity by assigning each a small number of codewords and using scramble masks that have selected properties.

Allowable Subject Matter

4. Claims 1-10 , 19, 22-23, 24-29, 48-52, 53-54,56 67 are allowed

5. Claims 12-15,17-18, 20-21, 31-34, 37, 38-42, 44, 46-47, 57-60,61-63, 64-66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

Please also notice objection to claims under 37 CFR 1.75

Conclusion

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

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(for formal communications intended for entry, for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

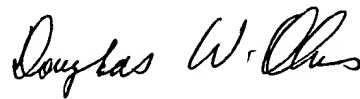
Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ricardo Pizarro** whose telephone number is (703) 305-1121. The examiner can normally be reached on Monday-Friday from 9:00 AM to 5:30 PM. The fax number for this Group is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Douglas Olms**, can be reached on (703) 305-4703.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

March 19, 2004

Ricardo M. Pizarro



DOUGLAS OLMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600